Burnout and Career Satisfaction in Neuro-Oncology: A Survey of the Society for Neuro-Oncology and the European Association of Neuro-Oncology Membership

Yust-Katz, Shlomit ; O'Brien, Barbara ; Vera, Elizabeth ; Acquaye, Alvina ; Weller, Michael ; Armstrong, Terri

Abstract: BACKGROUND Professional burnout is a syndrome characterized by emotional exhaustion, depersonalization, and loss of personal achievement. Burnout is a significant issue among health care providers, and neuro-oncology providers may be at high risk. We conducted a survey to evaluate burnout and career satisfaction among those caring for patients with brain tumors, and to identify risk factors for burnout. METHODS We distributed an anonymous online survey to Society for Neuro-Oncology (SNO) members in 2016 and to European Association of Neuro-Oncology (EANO) members in 2017. The survey was comprised of personal and professional characteristics questions and the validated Maslach Burnout Inventory - Human Services Survey (MBI-HSS) questionnaire. Statistical analysis included descriptive statistics, univariate and multivariate analyses, and incorporation of recently defined burnout profiles. RESULTS Sixty-three percent of SNO and 61% of EANO participants were identified as having high burnout according to MBI-HSS. Among SNO participants, physicians had a lower rate of high burnout (61%) compared to allied health professionals (68%, $p<0.01$) and basic scientists (83%, $p<0.01$). Regarding the factors most commonly contributing to high burnout, SNO participants most commonly experienced high emotional exhaustion (48% of SNO participants vs 34% of EANO participants), whereas EANO participants most commonly experienced low personal achievement (40% vs 28%). Among both SNO and EANO participants, increasing job satisfaction reduced the likelihood of high burnout. CONCLUSIONS The prevalence of burnout among neuro-oncology professionals is high and personal risk factors were identified. Burnout profiles recognize a continuum of well-being and warrant further research.

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Title: Burnout and Career Satisfaction in Neuro-Oncology: A Survey of the Society for Neuro-Oncology and the European Association of Neuro-Oncology Membership

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Abstract:

Background

Professional burnout is a syndrome characterized by emotional exhaustion, depersonalization, and loss of personal achievement. Burnout is a significant issue among health care providers, and neuro-oncology providers may be at high risk. We conducted a survey to evaluate burnout and career satisfaction among those caring for patients with brain tumors, and to identify risk factors for burnout.

Methods

We distributed an anonymous online survey to Society for Neuro-Oncology (SNO) members in 2016 and to European Association of Neuro-Oncology (EANO) members in 2017. The survey was comprised of personal and professional characteristics questions and the validated Maslach Burnout Inventory – Human Services Survey (MBI-HSS) questionnaire. Statistical analysis included descriptive statistics, univariate and multivariate analyses, and incorporation of recently defined burnout profiles.

Results

Sixty-three percent of SNO and 61% of EANO participants were identified as having high burnout according to MBI-HSS. Among SNO participants, physicians had a lower rate of high burnout (61%) compared to allied health professionals (68%, $p<0.01$) and basic scientists (83%, $p<0.01$). Regarding the factors most commonly contributing to high burnout, SNO participants most commonly experienced high emotional exhaustion (48% of SNO participants vs 34% of EANO participants), whereas EANO participants most commonly experienced low personal achievement (40% vs 28%). Among both SNO and EANO participants, increasing job satisfaction reduced the likelihood of high burnout.

Conclusions

The prevalence of burnout among neuro-oncology professionals is high and personal risk factors were identified. Burnout profiles recognize a continuum of well-being and warrant further research.

Importance of the Study: Burnout is a significant issue among healthcare providers. This manuscript reports the results of the first survey of burnout among neuro-oncology professionals. We found that the prevalence of burnout among neuro-oncology professionals is high. Further, several personal characteristics were identified as risk factors. Given the established effects of burnout on well-being, professional success, and patient care, further study and attention to this topic are warranted. The results from this survey can inform approaches needed to reduce burnout and promote career satisfaction and well-being among neuro-oncology professionals. Already, as a result of this survey, SNO has instituted wellness measures for its membership, such as the SNOCares Wellness Initiative and a Wellness Committee. Further action should be taken to improve the wellness of the neuro-oncology community, which in turn influences patient care.

Introduction:

Professional burnout is a syndrome characterized by emotional exhaustion, depersonalization (treating people as if they are objects), and loss of personal achievement (decreased meaning or effectiveness in

work)[1]. Burnout can be associated with serious personal consequences, including strained relationships, anxiety, depression, substance abuse, and suicide. Burnout is also associated with substantial professional consequences, including impaired patient care and medical errors, decreased professionalism, and early retirement[1]. Recently, professional burnout has been recognized as a medical condition[2].

Burnout is a significant issue among healthcare providers, with 45% of United States (U.S.) physicians reporting burnout symptoms, and 34-43% of nurses in the hospital setting reporting symptoms[3,4]. The situation appears similar in Europe, where a study of 1,000 primary care physicians demonstrated at least a third of participants have features of burnout[5]. The issue of burnout has been found to be particularly relevant for those caring for patients with cancer. In a survey by the American Society of Clinical Oncology (ASCO), 45% of respondents reported at least one symptom of burnout, with a 320% increased risk among academics focusing on only one type of cancer[6]. Likewise, a study performed by the European Society of Medical Oncology that included European oncologists aged 40 or younger revealed that 71% of participants had at least one symptom of burnout (depersonalization 50%; emotional exhaustion 45%; low accomplishment 35%)[7].

Neuro-oncology providers may be at particularly high risk of burnout, as caring for patients with brain tumors who are often very symptomatic and facing a very poor prognosis can be uniquely demanding, and the lack of advances in therapies despite considerable efforts can be frustrating. We aimed to evaluate burnout and career satisfaction among those caring for patients with brain tumors across the neuro-oncology community, and to identify risk factors for burnout. To this end, we initially conducted a survey of Society for Neuro-Oncology (SNO) members and shortly thereafter conducted the same survey of European Association of Neuro-Oncology (EANO) members.

Methods:

A link to the anonymous, online survey (via SurveyMonkey) was distributed to SNO members via email on 3 separate occasions (September 13, 2016, September 27, 2016, November 17, 2016). Subsequently (March 21, 2017, April 18, 2017, May 5, 2017), a link to the same survey was distributed to EANO members via email and the electronic EANO newsletter. Membership of both organizations is comprised of physicians, basic scientists, and allied health professionals (nurses, nurse practitioners, physician assistants, social workers, pharmacists, psychologists). The survey consisted of two parts. The first part was comprised of questions related to demographic (e.g. age, marital status) and professional (e.g. years of experience, practice environment) characteristics, and potential burnout risk factors and protective factors ~~(according to the literature),~~ such as habits (e.g., exercise, alcohol intake) and career circumstances (e.g., academic vs private practice, years in practice), many of which have been explored in other studies of burnout[3-7]. Career satisfaction was assessed using a direct question regarding career satisfaction. The second part comprised the Maslach Burnout Inventory – Human Services Survey (MBI-HSS)[8]. The full survey is available by request.

The MBI-HSS is a 22-item questionnaire considered the gold-standard tool for measuring burnout. The MBI-HSS evaluates three dimensions of burnout: emotional exhaustion, depersonalization ~~(treating people as if they are objectscynicism)~~, and personal achievement. Burnout is described on a continuum from low to high. Studies typically report percentages of participants with high burnout. Per the survey manual (3rd edition), high burnout is defined as having high emotional exhaustion and/or high depersonalization, and/or low personal achievement scores[8]. In the standard scoring for health care workers, participants with scores ≥ 27 on the emotional exhaustion subscale, ≥ 10 on the depersonalization subscale, or ≤ 33 on the personal accomplishment subscale, were considered in the high range in each of the dimensions. There is no total score. Responses with 1 or 2 missing answers on the emotional exhaustion and personal achievement subscales, or 1 missing answer on the depersonalization subscale, were excluded from the analysis.

In 2018, simultaneous to our original analysis of the study data, the MBI-HSS authors published a 4th edition of the MBI manual[9]~~. Included in the 4th edition was their recent work establishing profiles that further describe the burnout experience[10]~~. They revised their scoring system for determining burnout

severity. Previous editions split the population distribution into thirds and used the top third to identify high scores for each scale. Now, they use the normative population distribution parameters (mean and standard deviation) to determine a critical boundary. Scores greater than the critical boundary are considered high scores for each scale. Further, the authors established five profiles that elaborate on the burnout experience[10]. These profiles are based on the scores of the three subscales. Three distress profiles focus on high scores on the emotional exhaustion or depersonalization subscales. When high scores on either of these subscales are absent, a low score on the personal achievement scale takes precedence. Thus, the burnout experience can be interpreted as a spectrum with one positive profile (Engaged) and one extreme negative profile (Burnout) at the ends of the spectrum. Three profiles (Ineffective, Overextended, and Disengaged) comprise the middle. All but the Engaged profile comprise the group previously described as "high burnout." We augmented our analysis with the inclusion of the profile frequencies to further describe the SNO and EANO memberships' burnout experience.

Statistical analysis

The surveys of SNO and EANO membership were analyzed separately, to allow identification of burnout for each society's members. All surveys of SNO membership received through December 2016 were included in the SNO analysis, and all surveys of EANO membership received through May 2017 were included in the EANO analysis. Although asked not to participate more than once, the anonymous nature of the survey may have allowed for members to participate in both the SNO and EANO distributions of the survey. Because of our interest in physician-reported burnout and this potential overlap, analysis of the physician subgroup in both the SNO and EANO samples was undertaken, with the SNO sample including those practicing in North American and the EANO sample including those practicing in Europe. Other continents and countries represented a small population which did not lend itself to further evaluation. Standard descriptive statistics were used to characterize participants and summarize the MBI-HSS and profile scores. Mean differences in MBI-HSS scores were evaluated with one-sample t-tests, independent samples t-tests and one-way ANOVAs with adjustment for multiple comparisons (Bonferroni) where appropriate. Using the scoring provided in the 3rd edition of the MBI-HSS manual, the percentage of participants exhibiting high burnout was calculated. Associations with high burnout among

variables of interest were evaluated through Chi-square tests for categorical variables and *t*-tests for continuous variables in univariate analyses. Then, to determine which combination of factors increased

the risk of high burnout, all variables with $p<0.10$ in the univariate analysis were fitted into a multiple logistic regression model for high burnout with backwards selection. Significance level for the multiple logistic regression model was $p < 0.05$. Sum scores for the burnout profiles were calculated and to determine the level of severity, the critical boundary for each scale was found using the provided means of the "Medicine" population (n=1,104) (3rd edition). All analyses were performed using IBM SPSS Version 23[11].

Results:

A total of 427 SNO members participated in the Career Satisfaction and Burnout Survey, and 82% completed the MBI-HSS, for a final sample of SNO members totaling 345 participants. A total of 143 EANO members participated in the survey, and 85% completed the questionnaire, for a final sample of EANO members totaling 121 participants.

Demographic and Professional Characteristics:

SNO Member Characteristics: A wide age range was represented, with the highest percentage of participants being between 35-44 years old (36%); the sexes were equally represented, with males comprising 47% of participants. Eighty-four percent were married or in a long-term personal relationship and 59% had children in the household. Participants primarily practiced in North America, (72%), followed by Europe (15%). The majority (73%) of respondents were physicians (of which 70% practiced in North America), followed by allied health professionals (n=53), and basic scientists (n=29). Of physicians practicing in North America, 81% practiced in the academic setting. The descriptive characteristics of the sample are presented in Table 1.

EANO Member Characteristics: A wide age range was represented, with the highest percentage of participants being between 45-54 years old (35%); the sexes were equally represented, with males

comprising 49% of participants. Sixty-five percent were married or in a long-term personal relationship and 53% had children in the household. The majority (88%) of respondents were physicians, followed by allied health professionals (9%), and basic scientists (3%). Most of the participants practiced in Europe (802%). Of the 83% of physicians who practiced in Europe, 87% worked in an academic setting. The descriptive characteristics of the sample are presented in Table 2.

Career Satisfaction and Lifestyle Characteristics

SNO Member Characteristics: On a 10-point scale, the median stress level reported was 7, and the median job satisfaction reported was 7. Lack of sleep (≤ 6 hours/night) was reported in 60% and lack of exercise (≤ 30 minutes/week) was reported in 23%. Only 49% reported spending time with family and/or friends on a regular basis. Sixty-seven percent reported never or rarely praying, meditating, or using relaxation techniques. Twenty-six percent reported never consuming alcohol in a typical week, while 20% reported consuming more than 8 alcoholic drinks in a typical week. Among participants, depression and anxiety were not uncommon, with 19% and 26% reporting a history of each, respectively. Habits, well-being and job satisfaction are further detailed in Table 1.

EANO Member Characteristics: On a 10-point scale, the median stress level reported was 6, and the median job satisfaction reported was 7. Lack of sleep (≤ 6 hours/night) was reported in 57% and lack of exercise (≤ 30 minutes/week) was reported in 27%. Only 50% reported spending time with family and/or friends on a regular basis. Forty-three percent reported never praying, meditating or using relaxation techniques. Eighteen percent reported never consuming alcohol in a typical week, while 10% reported consuming more than 8 alcoholic drinks in a typical week. Among participants, depression and anxiety was not uncommon, with 15% and 28%, reporting a history of each, respectively. Habits, well-being and job satisfaction are further detailed in Table 2.

Maslach Burnout Inventory-HSS Results

SNO Members: Overall, 63% of participants were identified as having high burnout according to MBI-HSS. The MBI-HSS summary scores and severity levels are further detailed in Table 3. Forty-eight percent reported high emotional exhaustion, 36% reported high depersonalization, and 28% reported low personal achievement, any of which qualify as high burnout. There was no significant difference identified between genders, with 60% of male and 66% of female participants identified as having high burnout. However, there were significant mean differences among the age groups sampled. The high burnout rate was the lowest among participants aged 55 and over (51%) (p=<0.01).

Physicians had a lower rate of high burnout (61%) compared to allied health professionals (68%, p<0.01) and basic scientists (83%, p<0.01). Regarding the mean score, basic scientists had lower personal achievement scores (mean=27.9) than physicians (mean=37.4) or allied health professionals (mean=37.6) (F(2, 326)=19.98, p<0.001).

Participants tended to under-report burnout on self-report. Among the 45% of participants who stated they were not experiencing any current burnout, 35% were identified as having high burnout by the MBI-HSS. Additionally, among the 20% of participants who were unsure whether they were currently experiencing burnout, 75% were identified as having high burnout by the MBI-HSS. Of note, 49% of participants reported experiencing burnout at some point in the past, with 46% experiencing burnout less than 2 years ago and 54% more than 2 years ago from survey completion.

EANO Members: Overall, 60% of participants were identified as having high burnout according to the MBI-HSS. Sixty-five percent of participating European physicians were identified as having high burnout. Physician subspecialty was not significantly associated with burnout although there was a trend for a lower rate of burnout among radiation oncologists.

The MBI-HSS summary scores and severity levels are further detailed in Table 3. Thirty-four percent reported high emotional exhaustion, 34% reported high depersonalization, and 40% reported low personal achievement, any of which qualify as high burnout. There was no significant difference identified

between genders, with 64% of male and 56% of female participants identified as having high burnout. Contrary to the SNO data, there were no significant mean differences in high burnout rate among the age groups sampled.

Participants tended to under-report burnout when asked to self-report. Among the 55% of participants who stated they were not experiencing any current burnout, 38% were identified as having high burnout by the MBI-HSS. Additionally, among the 29% of participants who were unsure whether they were currently experiencing burnout, 83% were identified as having high burnout by the MBI-HSS. Forty-three percent of participants reported experiencing burnout at some point in the past, with 56% experiencing burnout less than 2 years ago and 44% more than 2 years ago.

Risk Factors Associated with High Burnout

Identified Risk in SNO Members: Personal and professional characteristics associated with high burnout on univariate analysis were assessed. When evaluated individually, the following factors were found to be significantly associated with high burnout among the SNO participants: perception of inadequate income, less weekly exercise, less time spent with family, no time spent on hobbies, higher current stress level, lower job satisfaction, subjective burnout, history of subjective burnout, self-reported history of depression, self-reported history of anxiety, lack of institutional mechanism for addressing burnout ($p<0.05$), working in private industry, being a heavy drinker, and profession ($0.05<p<0.10$) (Table 1).

Among physicians practicing in North America, the following individual factors were found to be significantly associated with high burnout: not exercising or exercising less than 30 minutes a week, less time spent with family, no time spent on hobbies, higher current stress level, lower job satisfaction, subjective history of burnout, self-reported history of depression, self-reported history of anxiety, lack of institutional mechanism for addressing burnout ($p<0.05$), not being married or in a long term relationship, perception of inadequate income, not spending much time on research tasks (fewer than 5 hours) ($0.05<p<0.10$) (Table 1). Subspecialty (neuro-oncology/medical-oncology, neurology, radiation-oncology, neurosurgery) was not found to be associated with burnout.

Results from the multiple logistic regression model identified seven factors that together produced the highest probability of predicting burnout among SNO members: less time spent with family, less weekly exercise, subjective burnout, self-reported history of depression, self-reported history of anxiety, lower job satisfaction, and profession (p<0.05) (Cox & Snell R^2=0.43, Nagelkerke R^2=0.28, overall correction prediction 84%). Participants who only "sometimes" spent time with family were 2.4X more likely to have high burnout than participants who "regularly" spent time with family (p=0.026, OR=2.4, 95% CI: 1.1, 5.1). Exercising more than 30 minutes a week reduced the likelihood of high burnout 12-26% compared to not exercising at all or exercising less than 30 minutes (30 minutes-2 hours: p<0.001, OR=0.13, 95% CI: 0.05, 0.35; 2-5 hours: p=0.002, OR=0.19, 95% CI: 0.06, 0.54; 5 or more hours: p=0.025, OR=0.26, 95% CI: 0.08, 0.84). Participants who currently felt burnout were 8.5X more likely to have high burnout (p<0.001, OR=8.5, 95% CI: 4.1, 17.8). Participants with a self-reported history of depression were 3.7X more likely to have high burnout (p=0.019, OR=3.7, 95% CI: 1.2, 11.0). Participants with a self-reported history of anxiety were 2.9X more likely to have high burnout (p=0.32, OR=2.9, 95% CI: 1.1, 7.8). Increasing job satisfaction reduced the likelihood of high burnout by 70% (p<0.001, OR=0.70, 95% CI: 0.58, 0.84). Basic scientists were 8.4X more likely to have high burnout than physicians (p=0.028, OR=8.4, 95% CI: 1.3, 56.2) (Table 4).

For the group of physicians practicing in North America, results from the multiple logistic regression model identified five factors that together produced the highest probability of predicting burnout: less weekly exercise, subjective burnout, subjective history of burnout, self-reported history of depression, lower job satisfaction (p<0.05) (Cox & Snell R^2=0.51, Nagelkerke R^2=0.69, overall correction prediction 88%). Exercising more than 30 minutes a week reduces likelihood of high burnout 88-93% compared to not exercising at all or exercising less than 30 minutes (30 minutes-2 hours: p<0.001, OR=0.07, 95% CI: 0.02, 0.35; 2-5 hours: p=0.106, OR=0.26, 95% CI: 0.05, 1.3; 5 or more hours: p=0.026, OR=0.12, 95% CI: 0.02, 0.77) . Participants who currently subjectively felt burnout were 20X more likely to have high burnout (p<0.001, OR=20.1, 95% CI: 6.5, 62.3). Participants who had previously felt burnout were 4X

more likely to have burnout (p=0.016, OR=4.0, 95% CI: 1.3, 12.3). A self-report history of depression increased the risk of burnout 5.4X (p=0.017, OR=5.4, 95% CI: 1.4, 21.4). Increasing job satisfaction reduces likelihood of high burnout by 39% (p=0.001, OR=0.61, 95% CI: 0.45, 0.82) (Table 4).

Identified Risk Factors in EANO Members: When evaluated individually, the following variables were found to be significantly associated with burnout: time spent working at home, having an adequate income, time spent with family and friends, caring for an elderly relative, subjective burnout, experienced burnout in the past, self-reported history of anxiety, current stress level, job satisfaction (p<0.05), time spent on administrative tasks, weeks of vacation, alcohol use, time spent on hobbies, self-reported history of depression, and institutional mechanism available for addressing burnout (0.05<p<0.10) (Table 1).

Results from the multiple logistic regression model identified three variables that together produced the highest probability of predicting burnout. These variables included: time spent on administrative tasks, time spent working at home, and self-identification of experiencing burnout (Cox & Snell R^2=0.33, Nagelkerke R^2=0.44, overall correction prediction 77%). Working more than 10 hours a week on administrative tasks (54% of study participants) increased the likelihood of burnout by 4X (p=0.007, OR=4.1, 95% CI: 1.5,11.5). Working 10 hours or more a week at home (35% of study participants) increased the likelihood of burnout by 4.5X (p=0.024, OR=4.5, 95% CI: 1.2, 16.8). Currently experiencing subjective burnout increased the likelihood of burnout by 35X compared to not currently experiencing burnout (p=0.001, OR=35.1, 95% CI: 4.0, 308.4). Even being unsure if one is currently experiencing burnout increased one's likelihood of burnout by 6.5X compared to not currently experiencing burnout (p=0.002, OR=6.5, 95% CI: 2.1, 20.8) (Table 5).

Physicians comprised the majority of participants. The remaining professions (allied health professionals and basic scientists) were too small in number to analyze separately. Furthermore, we suspected there might be practice differences for those practicing outside of Europe. Thus, the risk factors for burnout were analyzed separately for the 79 physicians practicing in Europe. Sixteen percent of physicians practicing in Europe self-reported burnout, and high burnout was identified in 65% via the MBI-HSS.

Among physicians practicing in Europe, the following variables were individually associated with high burnout: Time spent working at home, a belief that income was inadequate, current stress level, job satisfaction, and currently experiencing burnout. Physician subspecialty was not significantly associated with burnout, although there was a trend for a lower rate of burnout among radiation-oncologists. When attempting a multiple logistic regression model for high burnout among physicians practicing in Europe, currently experiencing subjective burnout was the sole risk factor for high burnout (Cox & Snell R^2=0.18, Nagelkerke R^2=0.25, overall correction prediction 69%) (Table 5). Self-identification of burnout increased the likelihood of high burnout by 14X (p=0.015, OR=13.9 95% CI: 1.7, 117.0). Even not being sure if they were experiencing burnout increased the likelihood of high burnout by 6X compared to not currently experiencing burnout (p=0.005, OR=5.8 95% CI: 1.7, 19.9).

Burnout Profiles:

SNO Member Profiles: The SNO participants can be further described by their burnout profiles. On the positive end of the spectrum, 29% experienced engagement in their work. On the negative end, 19% experienced extreme burnout. The remaining participants were overextended (30%), ineffective (21%) or disengaged in their work (2%). Burnout profiles among physicians practicing in North America were as follows: 31% experienced engagement in their work while 21% experienced extreme burnout. The remaining were overextended (30%), ineffective (17%), or disengaged in their work (1%).

EANO Member Profiles: The EANO membership was also further described by their burnout profiles. On the positive end of the spectrum, 34% participants experienced engagement in their work. On the negative end, 16% participants experienced extreme burnout. The remaining participants were ineffective (31%), overextended (18%), or disengaged (2%). Burnout profiles among European physicians were as follows: 30% experienced engagement in their work, while 15% experienced extreme burnout. The remaining were overextended (15%), ineffective (37%) or disengaged in their work (1%).

Discussion

In this study, we found high rates of burnout among both SNO and EANO members. Sixty-three percent of SNO members and 60% of EANO members participating in the Burnout and Career Satisfaction Survey were identified as having high burnout. Notably, there is incongruity between SNO and EANO participants regarding the factors most commonly contributing to high burnout. Among the three components of burnout (any of which can contribute to a high burnout determination), SNO participants most commonly experience high emotional exhaustion (48% of SNO participants, vs 34% of EANO participants), whereas EANO participants most commonly experienced low personal achievement (40%, vs 28%). Moreover, according to the newly-described profiles, it appears that physicians from North America identify more often as "overextended" while European physicians identify more often as "ineffective." The discrepancy between the responses of the SNO and EANO participants are potentially influenced by differing cultural and professional practice expectations.

Sorted by physicians only, the burnout rate in our study (61% for SNO and 65% for EANO) was higher than the 45% noted in a survey of U.S. oncologists[6], yet similar to the findings of another study that revealed a high burnout rate among young European oncologists [7]. The rate was also similar to the 60% burnout rate found in a survey of U.S. neurologists[12] and slightly higher than the rate reported among U.S neurosurgeons (56.7%)[13]. It is possible that caring for patients with both cancer and neurologic deficits is uniquely demanding. Among the physician subspecialties, we expected, for instance, that neuro-oncologists and medical oncologists, who tend to follow patients through the trajectory of their illness,

would suffer higher rates of burnout than neurosurgeons. However, no statistically significant differences were noted.

Interestingly, and similar to other studies, despite the high burnout rate, job satisfaction among our participants was relatively high, with a median response of 7 out of 10 for both SNO participants and EANO participants, with 10 representing most satisfied.

Among SNO members, physicians had a lower rate of high burnout compared to allied health professionals and basic scientists (the sample size of the EANO participants was too low to perform this sub-analysis). It is important to note, however, that the number of non-physician participants was low, and evaluation in a larger sample is warranted. Further, it is possible that differences in factors such as professional responsibilities, recognition, and support may influence the degree of burnout experienced. For instance, the significantly decreased sense of personal achievement among basic scientists compared to physicians and allied health may account for the higher burnout rate in this group.

Many participants did not have insight into their own burnout. This finding was most striking among EANO participants. While only 17% of EANO study participants reported feeling some degree of burnout, 60% were identified as having high burnout by the MBI-HSS. Participants may not be identifying their current state as burnout, as indicated by the 34% of EANO participants who did not self-report feeling burnout but were identified as having high burnout by the MBI-HSS. As a composite, these findings may be explained by low emotional self-awareness, a lack of familiarity with the features of burnout, or both. As for the difference among the SNO and EANO in subjectively identifying burnout, it is possible that social constructs or attitudes toward burnout may play a role.

Burnout was associated with a number of personal and professional characteristics on univariate analysis. These included psychologic distress (anxiety, high stress level), potentially decreased social outlets (for instance, limited time spent with family), and decreased job satisfaction. These factors have been associated with burnout in previous studies [6,12,13].

While many study participants reported habits indicative of a healthy lifestyle, a significant number of participants engaged in unhealthy habits. In our study, 58% of SNO participants and a similar 56% of EANO participants sleep less than the 7-8 hours per night recommended for adults by the United States' National Sleep Foundation[14]. Regarding exercise, the American Heart Association (www.heart.org) recommends a minimum of 150 minutes of moderate physical activity or 75 minutes of vigorous physical activity (or an equal combination of both) each week. Likewise, the European guidelines for cardiovascular disease prevention recommend that all healthy adults engage in a minimum of 30 min of moderate-intensity aerobic activity for five days each week or a minimum of 20 min of vigorous-intensity aerobic activity for three days each week[15]. Seventy-nine percent of the 81 SNO participants reporting < 30 minutes of exercise per week had high burnout. Among EANO participants, 55% of participants exercised less than 2 hours per week. According to Dietary Guidelines for Americans, women should consume no more than one alcoholic drink per day, and men no more than two (www.health.gov). The European code against cancer recommends no more than one alcoholic drink per day[16]. Eight percent of SNO study participants and 7% of EANO study participants reported drinking more than 8 drinks per week. These habits may represent a coping mechanism for high stress levels and high workloads and may also contribute to the experience of burnout. The described relationship between burnout and lifestyle factors suggests areas for intervention.

Our study is subject to several limitations. There might have been a response bias. Despite this concern, there were no significant differences in regard to age or sex, suggesting the sample was representative of membership. Of note, previous cross-sectional studies have not found significant differences between responding and non-responding physicians[17]. Another limitation of the study is the lack of questions pertaining to aspects of the work environment such as electronic health record use, which other recent studies have linked to high burnout. Another limitation was reaching all of the SNO and EANO membership. It was a concern that not all members received the survey due to internet security firewalls. Another limitation is that the survey responses reflect a "snapshot" in time and not a longitudinal

understanding of participants' well-being. Due to the anonymous nature of the survey and the opportunity to be both a SNO and EANO member simultaneously, there may be an overlap in participants, although we suspect it is a small overlap, if any. Lastly, the small number of study participants of professions other than physicians make separate analysis of these cohorts infeasible.

Our study also has several important strengths. First, the neuro-oncology professionals in the sample were drawn from a large representation of the international neuro-oncology community, given the distribution to both the SNO and EANO membership lists. Further, the survey included both the validated MBI-HSS as well as questions pertaining to personal and professional characteristics, providing important insights into potential relationships between these characteristics and burnout. This survey, the first of its kind in neuro- oncology, included neuro-oncology health care professionals from all career stages. Finally, the survey offers a preliminary analysis of burnout using the recently described burnout profiles.

Interventions are key to reducing physician burnout and may be best implemented early in one's career. Understanding the personal, professional, and systemic risk factors for burnout informs the development of intervention models to prevent burnout, identify burnout in individuals, and support medical professionals already dealing with the symptoms of burnout. Many programs to address burnout have focused on the individual, with studies supporting a benefit of mindfulness training[18] and resiliency programs, among other strategies. However, there is increasing awareness that an organizational-level approach to tackling burnout must also be implemented, addressing both physician culture (self-sacrifice, striving for "superhuman" performance, for instance) and the root organizational drivers of burnout[19]. There is an increasing interest among health care institutions to adopt more system-level interventions, such as success metrics that include physician satisfaction and well-being, and practice models that promote work-life integration and physician autonomy[20]. Burnout is receiving broad attention in the medical community, and is included in the World Health Organization's 11th Revision of the International Classification of Diseases (ICD-11), as an occupational phenomenon[2]. For its part, SNO has instituted wellness measures to combat burnout for its members, such as the SNOCares Wellness Initiative and a Wellness Committee[21]. ~~(SNO website, https://www.soc-neuro-onc.org/Default.aspx),~~

bringing awareness to burnout symptoms and providing members with coping techniques to manage personal and workplace stressors.

Conclusion

The prevalence of burnout among neuro-oncology professionals is high. This may be in part due to the particularly grim prognosis faced by many patients that neuro-oncologists care for, and to the narrow focus of most neuro-oncology professionals in providing care primarily to patients with brain tumors. Given the known effects of burnout on both physician well-being, professional success, and patient care, further study and attention to this topic are warranted. Awareness of the role of personal habits is critical for implementing change. Institutional programs for preventing and addressing burnout, and highlighting resiliency are also key, and may be best when implemented early in one's career. Further action should be taken to build on the wellness measures recently instituted by SNO, thereby improving the wellness of the neuro-oncology community, which in turn influences patient care. Future studies should identify strategies to prevent and reduce burnout, and thereby improve the well-being of both neuro-oncology professionals and patients.

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Table 1

		Entire study population - SNO				North American physicians			
			High burnout by MBI-HS				High burnout by MBI-HS		
		N (%)	No high burnout (36.8%)	High burnout (63.2%)	Sig	N (%)	No high burnout (39%)	High burnout (61%)	Sig
Gender	Male	161 (47%)	40%	60%	0.259	104 (59%)	40%	60%	0.7
	Female	183 (53%)	34%	66%		72 (41%)	38%	63%	
Age[a]	25-44	179 (52%)	34%	66%	0.174	91 (52%)	37%	63%	0.605
	45+	165 (48%)	41%	59%		85 (48%)	41%	59%	
Marital status	Married	290 (84%)	38%	62%	0.322	151 (86%)	42%	58%	0.093
	Not married	55 (16%)	31%	69%		25 (14%)	24%	76%	
Have children at home	No	135 (41%)	34%	66%	0.403	66 (40%)	35%	65%	0.384
	Yes	197 (69%)	39%	61%		106 (60%)	42%	59%	
Region of practice	North America	247 (72%)	36%	64%	0.819				
	non North America	98 (28%)	38%	62%					
Practice setting	Academic	289 (84%)	37%	63%	0.108	143 (81%)	41%	59%	0.285
	Private	47 (14%)	30%	70%		32 (18 %)	31%	69%	
	Industry	9 (2%)	67%	33%		1 (1%)	100%	0%	
Time on administrative tasks[b]	None/0-5 hrs	103 (30%)	39%	61%	0.417	49 (28%)	45%	55%	0.332
	5-10 hrs	102 (30%)	36%	64%		50 (28%)	32%	68%	
	10-20 hrs	91(26%)	35%	65%		52 (29%)	40%	60%	
	20-30 hrs	31 (9%)	45%	55%		15 (8%)	53%	47%	
	30 or more hrs	17 (5%)	18%	82%		10 (5%)	20%	80%	
Time on research tasks[b]	None	36 (10%)	33%	67%	0.342	17 (10%)	24%	76%	0.077
	0-5 hrs	110 (32%)	32%	68%		62 (35%)	29%	71%	
	5-10 hrs	58 (17%)	41%	59%		25 (14%)	44%	56%	
	10-20 hrs	63 (18%)	46%	54%		40 (23%)	53%	47%	
	20 or more hrs	77 (22%)	34%	66%		32 (18%)	47%	53%	
Time working at home[b]	None/0-5 hrs	135 (39%)	40%	60%	0.195	51 (29%)	43%	57%	0.767
	5-10 hrs	113 (32%)	30%	70%		62 (35%)	39%	61%	
	10+ hrs	97 (28%)	40%	60%		63 (36%)	37%	63%	
Weeks of vacation	2 or less	140 (41%)	41%	59%	0.206	62 (35%)	44%	56%	0.517
	3 to 4	138 (40%)	31%	69%		86 (49%)	35%	65%	
	5 or more	67 (19%)	40%	60%		28 (16%)	43%	57%	
Adequate income	No	185 (54%)	31%	69%	0.021	87 (49%)	32%	68%	0.059

	Yes	159 (46%)	43%	57%		89 (51%)	46%	54%	
Exercise[b]	None/<30 mins	81 (23%)	21%	79%	0.002	39 (22%)	21%	79%	0.019
	30 mins - 2 hrs	123 (36%)	47%	53%		66 (37%)	52%	48%	
	2-5 hrs	100 (29%)	37%	63%		47 (27%)	38%	62%	
	5+ hrs	41(12%)	37%	63%		24 (14%)	38%	62%	
Time spent with family/friends[b]	Never/Rarely	38 (11%)	32%	68%	<0.001	20 (11%)	25%	75%	<0.001
	Sometimes	138 (40%)	24%	76%		75 (44%)	24%	76%	
	Regularly	168 (49%)	49%	51%		80 (45%)	58%	42%	
Time spent in prayer/meditation/relaxation[b]	Never	117 (34%)	37%	63%	0.932	56 (32%)	38%	62%	0.941
	Rarely	113 (33%)	38%	62%		64 (36%)	41%	59%	
	Sometimes/Most days/Daily	115 (33%)	36%	64%		56 (32%)	39%	61%	
Alcohol use[b]	None	89 (26%)	40%	60%	0.086	40 (23%)	48%	52%	0.274
	Moderate drinker	226 (66%)	38%	62%		122 (70%)	39%	61%	
	Heavy drinker	28 (8%)	18%	82%		13 (7%)	23%	77%	
Time on household activities[b]	0-3 hrs	138 (40%)	33%	67%	0.327	76 (44%)	32%	68%	0.153
	3-10 hrs	161 (47%)	41%	59%		75 (43%)	47%	53%	
	10+ hrs	43 (13%)	37%	63%		23 (13%)	44%	57%	
Care for elderly at home	No	197 (57%)	37%	63%	0.951	110 (63%)	40%	60%	0.841
	Yes	147 (43%)	37%	63%		65 (37%)	39%	61%	
Time spent on hobbies[b]	None	97 (28%)	31%	69%	0.031	51 (29%)	31%	69%	0.036
	0-3 hrs	166 (48%)	34%	66%		84 (48%)	36%	64%	
	3+ hrs	82 (24%)	49%	51%		41 (23%)	56%	44%	
Hours of sleep	Less than 7	167(48%)	36%	64%	0.712	83 (48%)	37%	63%	0.593
	7 or more	177 (52%)	38%	62%		92 (52%)	41%	59%	
	No	156 (45%)	65%	35%	<0.001	72 (41%)	75%	25%	<0.001

Currently experiencing burnout	Yes	189 (55%)	14%	86%		104 (59%)	14%	85%	
Previous burnout	No	138 (40%)	48%	52%	0.002	72 (41%)	56%	44%	0.001
	Yes	168 (49%)	29%	71%		89 (51%)	27%	73%	
	I don't know	39 (11%)	33%	67%		15 (85)	33%	67%	
History of depression	No	252 (80%)	44%	56%	<0.001	125 (77%)	47%	53%	0.002
	Yes	65 (20%)	14%	86%		38 (23%)	18%	82%	
History of anxiety	No	238 (73%)	44%	56%	<0.001	124 (74%)	45%	55%	0.011
	Yes	88 (27%)	19%	81%		43 (26%)	23%	77%	
Institutional mechanism	No	146 (42%)	29%	71%	0.024	60 (34%)	23%	77%	0.005
	Yes	64 (19%)	41%	59%		35 (20%)	54%	46%	
	I don't know	134 (39%)	44%	56%		80 (46%)	45%	55%	
Profession	Physician	252 (75%)	34%	61%	0.051				
	Allied health	53 (16%)	32%	68%					
	Basic scientist	29 (9%)	17%	83%					

		N	Mean	SD	Sig	N	Mean	SD	Sig
Current stress level	No high burnout	127	5	2.3	<0.001	69	4.8	2.3	<0.001
	High burnout	217	6.7	1.8		106	7	1.7	
Job satisfaction	No high burnout	127	7.4	1.7	<0.001	69	7.5	1.7	<0.001
	High burnout	216	5.4	2.1		105	5.1	2.2	

Table 1. Results of the univariate analysis of factors associated with high burnout among SNO members.

[a]based on median age

[b]based on a typical week

Table 2

		Entire study population-EANO				European physicians			
			High burnout by MBI-HS		Sig		High burnout by MBI-HS		Sig
			No high burnout	High burnout			No high burnout	High burnout	
		N(%)	%	%	Sig	N(%)	%	%	Sig
Gender	Male	59 (49%)	35.6	64.4	0.371	43 (54%)	32.6	67.4	0.558
	Female	62 (51%)	43.5	56.5		36 (56%)	38.9	61.1	
Age[a]	25-54	84 (69%)	42.9	57.1	0.28	55 (70%)	41.8	58.2	0.073
	55+	37 (31%)	32.4	67.6		24 (30%	20.8	79.2	
Marital status	Married/Long Term	96 (79%)	38.5	61.5	0.619	64 (81%)	31.3	68.8	0.108
	Not married	25 (21%)	44	56		15 (19%)	53.3	46.7	
Have children at home	No	57 (47%)	38.6	61.4	0.82	37 (47%)	32.4	67.6	0.6
	Yes	64 (53)	40.6	59.4		42 (53%)	38.1	61.9	
Region of practice	Europe	97 (80%)	39.2	60.8	0.823				
	non Europe	24 (20%)	41.7	58.3			-		
Practice setting	Academic	95 (80%)	40	60	0.968	68 (87%)	32.4	67.6	0.273
	Private	16 (14%)	37.5	62.5		10 (13%)	50	50	
	Industry	7 (6%)	42.9	57.1		0	0	0	
Time on administrative tasks[b]	None/0-10 hrs	67 (28%)			0.054	40 (51%)	27.5	72.5	0.135
	10 and more	54 (22%)				39 (49%)	43.6	56.4	
Time on research tasks[b]	None	21 (10%)	38.1	61.9	0.956	10 (13%)	60	40	0.153
	0-5 hrs	42 (17%)	42.9	57.1		30 (38%)	43.3	56.7	
	5-10 hrs	18 (7%)	33.3	66.7		13 (16%)	23.1	76.9	
	10-20 hrs	24 (10%)	37.5	62.5		17 (22%)	17.6	82.4	
	20 or more hrs	16 (6%)	43.8	56.3		9 (11%)	33.3	66.7	
Time working at home[b]	None/0-10 hrs	86 (71%)			0.001	54 (68%)	46.3	53.7	0.003
	10+ hrs	35 (29%)				25 (32%)	12	88	
Adequate income	No	66 (54%)	27.3	72.7	0.002	40 (51%)	20	80	0.004
	Yes	55 (46%)	54.5	45.5		39 (49%)	51.3	48.7	
Exercise[b]	None/<30 mins	33 (27%)	30.3	69.7	0.238	22 (28%)	31.8	68.2	0.931
	30 mins - 2 hrs	33 (27%)	33.3	66.7		24 (30%)	33.3	66.7	
	2-5 hrs	45 (37%)	51.1	48.9		26 (33%)	38.5	61.5	
	5+ hrs	10 (9%)	40	60		7 (9%)	42.9	57.1	

Time spent with family/friends[b]	Never/Rarely	14 (12%)	28.6	71.4	0.041	11 (14%)	27.3	72.7	0.645
	Sometimes	46 (38%)	28.3	71.7		31 (39%)	32.3	67.7	
	Regularly	61 (50%)	50.8	49.2		37 (47%)	40.5	59.5	
Time spent in prayer/meditation/relaxation[b]	Never	52 (43%)	38.5	61.5	0.32	37 (47%)	29.7	70.3	0.284
	Rarely	27 (22%)	29.6	70.4		17 (21%)	29.4	70.6	
	Sometimes/Most days/Daily	42 (35%)	47.6	52.4		25 (32%)	48	52	
Alcohol use[b]	None	28 (23%)	21.4	78.6	0.079	17 (21%)	17.6	82.4	0.207
	Moderate	75 (62%)	45.3	54.7		51 (65%)	39.2	60.8	
	Heavy	18 (15%)	44.4	55.6		11 (14%)	45.5	54.5	
Time on household activities[b]	0-3 hrs	56 (47%)	39.3	60.7	0.711	38 (48%)	36.8	63.2	0.742
	3-10 hrs	51 (43%)	43.1	56.9		32 (41%)	31.3	68.8	
	10+ hrs	13 (10%)	30.8	69.2		9 (11%)	44.4	55.6	
Care for elderly at home	No	58 (48%)	50	50	0.019	39 (49%)	41	59	0.306
	Yes	62 (52%)	29	71		40 (51%)	30	70	
Time spent on hobbies[b]	None	24 (20%)	20.8	79.2	0.087	20 (25%)	20	80	0.248
	0-3 hrs	51 (42%)	41.2	58.8		27 (34%)	40.7	59.3	
	3+ hrs	46 (38%)	47.8	52.2		32 (41%)	40.6	59.4	
Hours of sleep	Less than 7	68 (56%)	38.2	61.8	0.715	39 (49%)	35.9	64.1	0.934
	7 or more	53 (44%)	41.5	58.5		40 (51%)	35	65	
Currently experiencing burnout	No	66 (55%)	62.1	37.9	<0.001	42 (53%)	54.8	45.2	0.001
	Yes	20 (16%)	5	95		13 (17%)	7.7	92.3	
	I don’t know	35 (29%)	17.1	82.9		24 (30%)	16.7	83.3	
Previous burnout	No	54 (45%)	53.7	46.3	0.007	35 (44%)	48.6	51.4	0.081
	Yes	52 (43%)	32.7	67.3		33 (42%)	27.3	72.7	
	I don't know	15 (12%)	13.3	86.7		11 (14%)	18.2	81.8	
History of depression	No	88 (73%)	45.5	54.5	0.094	58 (73%)	41.4	58.6	0.186
	Yes	18 (15%)	27.8	72.2		10 (13%)	20	80	

	I don’t know/Prefer not to answer	15 (12%)	20	80		11 (14%)	18.2	81.8	
History of anxiety	No	75 (62%)	50.7	49.3	0.007	52 (66%)	44.2	55.8	0.076
	Yes	34 (28%)	20.6	79.4		21 (27%)	19	81	
	I don’t know/Prefer not to answer	12 (10%)	25	75		6 (7)	16.7	83.3	
Institutional mechanism	No	74 (61%)	31.1	68.9	0.053	55 (67%)	29.1	70.9	0.203
	Yes	17 (14%)	52.9	47.1		10 (13%)	50	50	
	I don't know	30 (25%)	53.3	46.7		14 (18%)	50	50	
Profession	Physician	100 (88%)	37	63	0.86				
	Allied health	10 (9%)	40	60					
	Basic scientist	4 (3%)	50	50					

[a]Based on median age; [b]During a typical week

		N	Mean	SD	Sig	N	Mean	SD	Sig
# weeks of vacation	No high burnout	48	5	1.5	0.053	28	5.4	1.4	0.102
	High burnout	73	4.4	1.8		51	4.7	1.6	
Current stress level	No high burnout	48	4.8	2.1	<0.001	28	5.1	2.1	0.034
	High burnout	73	6.4	1.9		51	6.1	2	
Job satisfaction	No high burnout	47	7.1	1.7	0.012	27	7.4	1.5	0.013
	High burnout	73	6.2	1.9		51	6.5	1.7	

Table 2. Results of the univariate analysis of factors associated with high burnout among EANO members.

[a]based on median age

[b]based on a typical week

Table 3

Table 3. MBI-HS summary scores and severity levels

	SNO members n=345			EANO members n=121		
	Emotional Exhaustion	Depersonalization	Personal Achievement	Emotional Exhaustion	Depersonalization	Personal Achievement
Mean (SD)	25.3 (12.7)	8.1 (6.4)	36.5 (7.4)	21.6 (11.7)	7.7 (5.4)	35.1 (7.2)
Median	26	7	37	21	7	36
Range	0-52	0-28	7-48	0-52	0-23	13-48
Possible score range	0-54	0-30	0-48	0-54	0-30	0-48
Low	34%	43%	28%	45%	44%	40%
Moderate	18%	21%	32%	21%	22%	30%
High	48%	36%	40%	34%	34%	31%
	North Ameican physicians n=176			European physicians =79		
Mean (SD)	26.1 (12.6)	8.4 (6.2)	37.4 (6.8)	21.3 (11.7)	8.3 (5.2)	34.3 (6.8)
Median	27	8	38	20	8	34
Range	0-52	0-25	8-48	0-52	0-23	16-48
Low	32%	39%	22%	46%	35%	46%
Moderate	17%	23%	34%	24%	27%	29%
High	51%	38%	44%	30%	38%	25%

Table 4. Results from multivariate logistic regression analysis for high burnout among SNO participants.

SNO study population	B	S.E.	Wald	df	Sig.	Odds Ratio	95% C.I.for Odds Ratio	
							Lower	Upper
Exercise (Ref.=None/<30 min)			16.523	3	0.001			
30 mins - 2 hrs	-2.054	0.51	16.232	1	0	0.128	0.047	0.348
2-5 hrs	-1.683	0.545	9.545	1	0.002	0.186	0.064	0.54
5+ hrs	-1.351	0.601	5.057	1	0.025	0.259	0.08	0.841
Time spent with family (Ref.=Regularly)			7.8	2	0.02			
Never/Rarely	-0.557	0.577	0.934	1	0.334	0.573	0.185	1.774
Sometimes	0.87	0.39	4.978	1	0.026	2.388	1.112	5.13
Current burnout (Ref.=No)	2.144	0.374	32.869	1	0	8.531	4.1	17.754
History of depression (Ref.=No)	1.304	0.556	5.493	1	0.019	3.685	1.238	10.965
History of anxiety (Ref.=No)	1.075	0.502	4.589	1	0.032	2.931	1.096	7.842
Job satisfaction	-0.364	0.094	15.13	1	0	0.695	0.578	0.835
Profession (Ref.=Physician)			6.457	2	0.04			
Allied health	0.728	0.471	2.391	1	0.122	2.072	0.823	5.217
Basic scientist	2.127	0.97	4.804	1	0.028	8.389	1.252	56.195
Constant	2.446	0.82	8.911	1	0.003	11.547		
Physicians practicing in North America								
Exercise (Ref.=None/<30 min)			10.949	3	0.012			
30 mins - 2 hrs	-2.624	0.807	10.559	1	0.001	0.073	0.015	0.353
2-5 hrs	-1.353	0.837	2.616	1	0.106	0.258	0.05	1.332
5+ hrs	-2.141	0.959	4.979	1	0.026	0.118	0.018	0.771
Current burnout (Ref.=No)	2.999	0.578	26.929	1	0	20.061	6.463	62.264
Previous burnout (Ref=No)			7.294	2	0.026			
Yes	1.387	0.573	5.847	1	0.016	4.002	1.3	12.313

I don’t know	-0.477	0.893	0.286	1	0.593	0.621	0.108	3.569
History of depression (Ref.=No)	1.683	0.705	5.705	1	0.017	5.381	1.353	21.41
Job satisfaction	-0.502	0.152	10.953	1	0.001	0.605	0.45	0.815
Constant	2.846	1.264	5.07	1	0.024	17.215		

Table 5. Results from multivariate logistic regression analysis for high burnout among EANO participants.

EANO members	B	S.E.	Wald	Df	Sig.	Odds Ratio	95% C.I.for Odds Ratio	
							Lower	Upper
Administrative tasks (Ref=10 or more hours)								
None-10 hours	1.4	0.5	7.3	1	0.007	4.1	1.5	11.5
Working at home (Ref=None/0-10 hours)								
10 or more hours	1.5	0.7	5.1	1	0.024	4.5	1.2	16.8
Current burnout (Ref.=No)				2	<0.001			
Yes	3.6	1.1	10.3	1	0.001	35.1	4	308.4
I don't know	1.9	0.6	10.1	1	0.002	6.5	2.1	20.8
Constant	-1.5	0.5	10.5	1	0.01	0.2		
European physicians								
Current burnout (Ref.=No)				2	0.003			
Yes	2.6	1.1	5.9	1	0.015	13.9	1.7	117
I don't know	1.8	0.6	7.7	1	0.005	5.8	1.7	20
Constant	-0.1	0.3	0.2	1	0.64	0.9		